INFORMATION SHEET

ORDER R5-2012-XXXX
RIVIERA WEST MUTUAL WATER COMPANY
RIVIERA WEST WATER TREATMENT PLANT
LAKE COUNTY

Background

The Riviera West Mutual Water Company owns and operates the Riviera West Water Treatment Plant (WTP) located along the west shore of Clear Lake in Lake County. The WTP is designed to treat up to 0.15 million gallons of water per day. The WTP provides treatment by coagulation, filtration, and chlorine disinfection. Sludge from the backwash tank is drained into a sludge holding tank. A septic hauler collects and disposes the sludge off-site to a permitted facility. Under a previous NPDES permit, which has been rescinded, supernatant from the backwash tank was intermittently discharged to Clear Lake. Currently, the Discharger is land applying the supernatant on an adjacent two-acre site. This discharge to land is currently not regulated.

The Discharger proposes to install a clarifier before the filters to enhance coagulation and sedimentation. The Discharger will continue to use filter backwash supernatant to irrigate approximately 0.77 acres of the land application area (LAA). A moderately dense growth of trees covers this field, which slopes to the north and northeast at a gradient of approximately 15 percent. Downgradient of the LAA is an existing drainage culvert that conveys storm water runoff to the lake.

The derivation of selected terms and conditions of the Order is discussed below.

Order Terms and Conditions

The antidegradation directives of State Water Board Resolution 68-16 require that waters of the State that are better in quality than established water quality objectives be maintained "consistent with the maximum benefit to the people of the State." Waters can be of high quality for some constituents or beneficial uses and not others. Policies and procedures for complying with this directive are set forth in the Basin Plan (including by reference State Water Board Resolution 68-16, "Statement of Policy With Respect to Maintaining High Quality Waters in California," or "Antidegradation" Policy).

Resolution 68-16 is applied on a case-by-case, constituent-by-constituent basis in determining whether a certain degree of degradation can be justified. It is incumbent upon the Discharger to provide technical information for the Central Valley Water Board to evaluate that fully characterizes:

- All waste constituents to be discharged;
- The background quality of the uppermost layer of the uppermost aquifer;
- The background quality of other waters that may be affected;
- The underlying hydrogeologic conditions;

- Waste treatment and control measures;
- How treatment and control measures are justified as best practicable treatment and control;
- The extent the discharge will impact the quality of each aquifer; and
- The expected degree of degradation.

In allowing a discharge, the Central Valley Water Board must comply with Water Code section 13263 in setting appropriate conditions. The Central Valley Water Board is required to implement the Basin Plan and consider the beneficial uses to be protected along with the water quality objectives essential for that purpose. The Central Valley Water Board need not authorize the full utilization of the waste assimilation capacity of the groundwater (Wat. Code, § 13263(b).) and must consider other waste discharges and factors that affect that capacity.

Some degradation of the groundwater for certain constituents is consistent with maximum benefit to the people of California because the technology, energy, and waste management advantages of community water treatment plants far outweigh the environmental impact of a community that would otherwise be reliant on numerous domestic wells. Economic prosperity of local communities is of maximum benefit to the people of California, and therefore sufficient reason to accommodate this wastewater discharge provided terms of reasonable degradation are defined and met. The Order authorizes some degradation consistent with the maximum benefit to the people of the State.

Based on the chemical character of the raw water treated at the WTP, the nature of the treatment process, and depth to groundwater; the discharge poses little threat to groundwater quality. The following treatment and control measures will be implemented at the WTP:

- Technology for treatment to drinking water standards;
- Approximately 0.77 net acres of land application area available for the application of supernatant; and
- Tailwater system to prevent the discharge of supernatant/stormwater mixtures to surface waters.

At this time, there is no reason to believe that additional control measures are needed to protect groundwater quality. This Order establishes discharge specifications, land application area requirements, and monitoring requirements to assure protection of the beneficial uses of groundwater.

Groundwater Limitations

Although the RWD lacked groundwater quality information, the land application of filter backwash supernatant is unlikely to impact groundwater quality based on the following:

- The WTP is located on the shores of Clear Lake. It is reasonable to assume groundwater quality is similar to lake water, which is good quality water.
- The supernatant from the filter backwash tank is similar in quality to lake water, with the exception of total trihalomethanes (THMs). The supernatant will be applied by sprinkler irrigation and it is likely that most of the THMs will volatilize before the water percolates into the ground. In addition, THMs, along with most waste constituents, found in the supernatant did not exceed applicable primary and secondary maximum contaminant levels. Manganese was the only exception, and this is likely due to improper sampling procedures.
- The elevation of the LAA (ranging from approximately 1,400 to 1,490 feet) is above lake level (approximately 1,329 feet). Groundwater within the LAA was not encountered in the test borings advanced to depths of approximately 30 feet. And therefore, the underlying groundwater is likely at or slightly above lake level.

Narrative groundwater limitations not to exceed current groundwater quality are adequate at this time. If raw water and supernatant monitoring indicates that the discharge of wastes poses a threat to groundwater quality, groundwater monitoring may be required. However, the discharge is not expected to impact groundwater based on topography and hydrogeologic conditions of the land application area, depth of groundwater, and quality of the lake water and supernatant discharge.

Discharge Prohibition A.1; Prohibition B.8; Land Application Area Requirements C.2, C.3, and C.5; and Provision F.1.a and F.1.c

Any supernatant runoff or supernatant/stormwater mixtures released to Clear Lake is in violation of the Order. Currently, no tailwater system exists, and an existing drainage ditch has the ability to convey supernatant runoff and stormwater mixtures to Clear Lake. The Discharger is required to submit a report detailing the completion and adequacy of the necessary improvements to contain such waste and prevent discharges to surface waters. However, the Discharger is still expected to comply with the Discharge Prohibitions prior to the construction of the cut-off ditch; and is required to submit an *Interim Compliance Plan* to provide operational details to prevent such discharge and demonstrate compliance with the Order prior to completion of the facility improvements.

Discharge Specification B.1 and Provision F.1.c

Based on 2008 flow data, the WTP has an average backwash flow of 5,000 gallons per day (gpd). However, the Discharger states that more frequent backwashing occurs during the summer months with flow rates ranging from 10,000 gpd to 15,000 gpd. Application of supernatant to the LAA will be year round. The filter backwash tank has a capacity of 45,000 gallons. The estimated soil infiltration rate within the LAA is approximately 8.3 inches per day. Based on the conditions above, filter backwash supernatant applied to the LAA shall not exceed a monthly average wet weather flow of 7,000 gpd from October through April and a monthly average dry weather flow of 15,000 gpd from May through September.

Provision F.1.b

It is unclear in the RWD or supplemental information how the flow of supernatant discharge is measured prior to land application. Therefore, the Order requires that the Discharger submit a *Land Application Flow Monitoring Plan* that provides operational details regarding supernatant application flow monitoring and determination of daily flow rates to the land application area.

Monitoring Requirements

The Order requires monitoring of the raw water, supernatant, and land application area. In order to adequately characterize the waste, the Discharger is required to monitor for constituents previously detected in the waste and compare these results to results submitted in the Report of Waste Discharge. If waste concentrations increase, the Monitoring and Reporting Program may be revised at the Executive Officer's discretion to require groundwater monitoring for those constituents.

Due to the low threat that the discharge poses, the Order will not require groundwater monitoring at this time. In addition, groundwater basins in Lake County are composed primarily of shallow alluvial deposits and deposits of the Clear Lake Volcanics over fractured basement rock of the Franciscan Formation[1]. Mount Konocti, just south of the WTP, is a composite of volcano with alternating layers of pyroclastic and lava rock. Dischargers at nearby facilities have not been able to install monitoring wells in these subsurface conditions.

Reopener

The conditions of discharge in the Order were developed based on currently available technical information and applicable water quality laws, regulations, policies, and plans, and are intended to assure conformance with them. Groundwater monitoring is not required at this time. Filter backwash supernatant is good quality water, and will likely not impact groundwater quality. The Discharger is required to monitor the raw water, supernatant, and land application area. If the information obtained from the monitoring activities indicate possible threat to water quality, it may be appropriate to reopen the Order to address compliance with the Basin Plan.

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[1] Lake County Groundwater Management Plan, CDM (in cooperation with the California Department of Water Resources, Northern District), 31 March 2006.